

## **Peter Linnell**

Title: Approximating Betti numbers over arbitrary fields

Abstract: Back in 1994, Lueck proved some beautiful theorems for approximating  $L_2$ -Betti numbers in the case the coefficient field is the rational numbers. This has since been extended to the case where the coefficient field is the algebraic numbers. In this talk, extensions of this result to arbitrary fields, or even arbitrary skew fields, will be discussed. Among the classes of groups considered will be amenable groups and pro- $p$  groups. Applications to ultraproducts and the Atiyah conjecture over  $\mathbb{C}$  will also be discussed.

This is joint work with Wolfgang Lueck, Roman Sauer and Thomas Schick.

## **Darren Long**

Title: Small subgroups of  $SL(3, \mathbb{Z})$

Abstract: The finitely generated infinite index subgroups of  $SL(3, \mathbb{Z})$  are somewhat mysterious. We exhibit some interesting examples and nonexamples, including infinite families of Zariski dense surface groups.